

**Banking Relationships and Conflicts of Interest:
Market Reactions to Lending Decisions by Korean Banks**

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ABSTRACT

This paper examines how the forced closure of failing banks and the transfer of their loans to surviving banks affect the market value of firms borrowing from the closed banks. Surprisingly, the pre-existing banking relationships between firms and banks that acquire their loans are detrimental to the positive valuation effects of the event followed by the banks' own renewal decisions of the transferred loans. Banks have an incentive to favor pre-existing relationships to increase the value of previously extended loans, and therefore loan renewals to firms with prior relationships do not signal borrower quality to the market that is aware of the banks' conflicts of interest.

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1. Introduction

Banks produce valuable information about borrowers or their investment projects that is not available to other equity investors (Fama, 1985).¹ Therefore, a bank's announcements about loan agreements, renewals, and changes in contractual terms would provide additional information to the capital markets about the value of borrowing firms. Furthermore, the borrowing firms obtain a variety of relationship-specific advantages from proprietary information held by the banks. Thus, news about bank sustainability should affect the market value of borrowing firms.

This paper explores the impact of the Korean bank reform of 1998 – the forced exit of failing banks and transfer of their loans to healthier banks – followed by the acquiring banks' own renewal decisions on the stock market value of firms borrowing from the closed banks. I specifically examine (1) whether the loss of the banking relationship with the closed banks was more than offset by the gain from the improvement in quality of the lending banks and (2) how firms' pre-existing relationships with the acquiring banks affected the market's valuation of the firms. The salient features of the sample, which make it possible to examine the two questions, are that each bank had to acquire the loan portfolio in its entirety from a failed bank, and that the pre-existing relationships between the borrowers of the acquired loans and the acquiring bank are identified.

¹ Information produced efficiently over time through lending relationships is derived from informal provision of insider information, subjective judgments on management abilities, accumulation of repayment history, and other private information associated with the monitoring of borrowing firms. Specifically, in the context of Myers and Majluf (1984), loans by banks are similar to internally generated funds (financial slack).

The destruction of the valuable banking relationships resulting from bank insolvency adversely affects the value of its borrowing firms, especially in a bank-centered financial system.² In this regard, the exits of failing banks should pull down the stock returns of the banks' client firms. Surprisingly, the average cumulative abnormal returns (CARs) estimated using the standard market model turn positive during the two months after the event, a period that allows the market to observe the acquiring banks' loan renewal decisions following the involuntary loan acquisitions. The positive CARs suggest that the loan transfers generate gains that do more than offset any losses from the termination of the relationships with the closed banks. This result brings our attention to the importance of the specific mechanisms employed to transfer borrowers from failed banks without harming their value.

Furthermore, banks with a prior relationship with a firm whose loan was transferred to them have superior information for their own loan renewal decisions – the standard informational advantage of the banking relationship. Thus, the market's response to the event might be expected to be favorable to firms that had a prior relationship, because such loan renewals should be more informed decisions. It is puzzling, however, that the CARs of firms that had no prior relationship with the banks that had to acquire their loans are significantly lower than those of firms that had a prior relationship with the banks, after controlling for the extent of firm's exposure to the event, various firm characteristics, and bank dummy variables.

² The benefits obtained by a bank from the information it collects through the continuing lending relationship are shared with its borrower to some extent in the form of lower costs, lower collateral and better availability of loanable funds (Peterson and Rajan, 1994; Boot and Thakor, 1994), easy access to capital (Hoshi, Kashyap, and Scharfstein, 1990), less cash flow constraint (Houston and James, 2001), quick recovery from firm distress (Morck and Nakamura, 1999), smooth loan pricing (Berlin and Mester, 1998), and less underpricing in an IPO (James and Wier, 1990).

Banks have an incentive to favor pre-existing bank relationships to increase the odds of recovering previously extended loans (the soft budget constraint) at the cost of degrading their reputation afterward. The market is aware of bank's conflict of interest, fully recognizing that a bank with a poor reputation can take the risk of extending loans to bad firms; therefore, the loan renewal may not signal good borrower quality to the market. In contrast, the market does place credence in the renewal of loans to firms without a prior relationship with the banks acquiring their loans so long as the market believes that the bank screens firms to identify good firms. Hence, the renewal conveys a clear positive signal to the market.

A theoretical model, in fact, shows that a positive loan announcement effect on the value of borrowers due to the standard informational advantage can be more than offset by the bank's conflict of interest. The effect of a pre-existing relationship is more likely to be negative when the size of the pre-existing loans is large and the screening costs of firms are low. Consistent with these arguments, the negative valuation effect of a pre-existing relationship increases with the size of pre-existing loans from the banks with conflicts of interest, and the screening costs are presumably low as the firms in the sample are all publicly traded firms.

I finally investigate the banks' lending decisions directly using the firm-bank level sample to see if the lending decisions are consistent with the stock market's expectations. I find that banks tend to maintain the lending relationships with the borrowing firms that had a pre-existing relationship, and however that the loan growth rates of those firms are significantly lower than those of the firms that had no prior relationship and whose relationship that came from the loan transfers is retained. These results suggest that banks have conflicts of interest that come with the pre-existing lending relationships.

This study sheds light on a new perspective on the fundamentals of the value of bank-borrower relationships – conflicts of interest in banking relationships: A pre-existing banking relationship with a bank can be detrimental to the valuation effect of a bank loan consolidation due to the bank’s conflict of interest. This result suggests that the intensity of a firm’s pre-existing relationship with an acquiring bank is important in understanding how successful a bank consolidation is in speeding up the resolution of financially distressed borrowing firms.

A number of articles examine the behavior of the publicly traded borrowing firms’ stock returns in response to bank-related events (bank loan agreements, bank distress news, and bank consolidations) to measure the value of bank-borrower relationships to the borrower.

First, several papers analyze the effects of bank loan announcements to argue for the existence of the value of relationship banking arising from the uniqueness of bank loans. James (1987) finds a positive stock price response to the announcement of new bank loan agreements that is larger than that associated with announcements of public debt offerings. Billett, Flannery, and Garfinkel (1995) refine the result by showing that higher-quality lenders’ loan announcements are associated with higher abnormal stock returns of their client firms. Lummer and McConnell (1989) and Best and Zhang (1993) distinguish new bank loans and loan renewal announcements to show that loan renewal announcements exhibit a significant positive and stronger return than new loan announcements.

The second branch of the literature studies the effect of changes in bank quality on client firms’ stock returns. Its main result is that a decrease in bank quality or increase in probability of bank’s insolvency reduces the market value of client firms due to possible destruction of relationship-specific advantage and information. Slovin, Sushka, and Polonchek (1993) investigate news about a bank’s financial distress followed by a regulatory authority’s rescue

package. Recently, Bae, Kang, and Lim (2002) use bank's bond downgrading in Korea, while Yamori and Murakami (1999) study a bank's insolvency in Japan.³ These studies interpret a decrease in bank quality simply as an increase in the probability of termination of bank-firm relationships and do not explicitly consider any resolutions following the bank insolvency, which have significant bearing on the overall impact on the values of client firms.

Third, studies on the market valuation effects of bank mergers and acquisitions (M&A) on client firms are also closely related to this paper. Karceski, Ongena, and Smith (2003) find that when both the acquiring and target banks involved in acquisitions are relatively small, small borrowers at target banks appear to benefit most from the consolidation, although not to a statistically significant degree. Djankov, Jindra, and Klapper (1999) argue that investors respond differently to changes in bank ownership: average abnormal return is negative for bank closure and domestic merger, and positive for nationalization and foreign sales.⁴ Unlike these studies, this paper explicitly incorporates the initial conditions of firms prior to consolidations such as the intensity of pre-existing lending relationship with acquiring banks and various firm characteristics. Furthermore, this paper studies a case of purchase and assumption (P&A). Under P&A, only assets and liabilities of a liquidated bank are transferred to an acquiring bank, whereas in M&A, an acquired firm's loan officers and other employees, as well as assets and liabilities, are transferred to an acquiring bank. This difference has implications for the transfer

³ Unlike these studies, Ongena, Smith, and Michalsen (2003) report that the impact of bank distress on client firms is insignificant in Norway.

⁴ Although firm value is not directly measured, Berger (1999), Berger, Saunders, Scalise, and Udell (1998), and Strahan and Weston (1998) examine the impact of M&A on loan availability, while Sapienza (2002) investigates the effect on loan contracts.

of private information about borrowing firms in the context of Calomiris and Karceski (1998), who argue that successful relationship banking depends on the careful management of the bank's human resources.

This paper is organized as follows. Section 2 describes the event, sample, and data. In Section 3, I conduct the estimation of CARs and various cross-sectional regressions. In Section 4, I briefly illustrate a theoretical model to explain the conflict of interest. In Section 5, I examine the determinants of bank's lending decisions. Section 6 concludes.

2. Event, sample, and data

2.1. Event

In November 1997, Korea encountered a foreign exchange crisis that was ignited by capital outflows: The crisis revealed the structural problems of the economy (see Fig. 1 for the stock price indexes and economic indicators during 1997-1998). On December 4, 1997, the Korean government announced the blueprint of a financial sector restructuring plan as one of the components of structural reform supported by a stand-by arrangement with the IMF. The main purpose of the plan was to address the problem of the banking system's large amount of bad loans and its weak capital structure. As a part of the plan, exit strategies had been developed for nonviable commercial banks.

The Financial Supervisory Service (FSS) announced on June 29, 1998 that five banks with negative net worth were to be closed, and their assets and liabilities, excluding nonperforming loans, were to be transferred to five financially sound and bigger banks in the form of a P&A

agreement (a detailed chronicle of the event is described in the Appendix).⁵ The five banks that had to acquire the assets and liabilities of the closed banks were selected by the regulatory authority, which took the financial health and nationwide business networks of the acquiring banks into account. The bundle of assets and liabilities of each closed bank was transferred in its entirety to each acquiring bank: DongNam to Housing, Kyongki to KorAm, ChungChong to Hana, DaeDong to Kookmin, and DongHwa to Shinhan, respectively. The five acquiring banks' target clientele, locational strategies, and branching networks were taken into consideration by the government when paring them with the five closed banks. As a result of this arrangement, the total number of commercial banks in Korea dropped from 26 to 21. See Fig. 2 for a simple diagram of the asset transfers.

This event offers a natural experimental setting to study the importance of bank quality and bank's conflict of interest in banking relationships.⁶ First, firms in Korea are closely linked to bank under a bank-centered financial system. During 1990-1998, bank and non-bank loans, stocks, and bonds represented 62.4%, 17.1%, and 20.5% of the external funds raised by Korean

⁵ The nonperforming loans, which is 64.3% of total loans made by the closed banks at the time of their closures, were purchased by the Korea Asset Management Corporation (KAMCO) at 80% discount on average.

⁶ This event does not overlap with recent studies about bank distress in Korea. Bae, Kang, and Lim (2002) identify only one main creditor bank of a publicly traded firm, which results in the exclusion of the five closed banks from their sample because none of the banks was the main creditor bank of a firm. Djankov, Jindra, and Klapper (1999) do not include this event in their study of the effect of bank insolvency on borrowing firms.

firms, respectively.⁷ Therefore, the effects of the bank-related event on the market value of firms borrowing from the bank are likely to be substantial because such firms were so heavily dependent on bank financing.

Second, the loan portfolio of each closed bank was transferred in its entirety to each acquiring bank, which rules out the self-selection or endogeneity problem in the analysis of the effects on a firm when its lender changes. Moreover, the banks were also left out of the decisions of the selection and matching of the failed and acquiring banks.

Third, the difference in financial health between the closed banks and the acquiring banks was so evident that a change in lender identity had potentially strong impacts on the firm value (Table 1). The average BIS capital adequacy ratio of the five closed banks (5.32%) is statistically different from that of the five acquiring banks (9.64%) as of the end of 1997. The average percentage of nonperforming loans of the closed banks is 9.08%, while that of the acquiring banks is 3.01%. In addition to their financial soundness, they also differ in market share – the total loan market share of the closed banks is 6.95%, while that of the acquiring banks is 30.96%.

Fourth, under the P&A arrangement, no personnel were transferred from the failed banks to the acquiring banks. The P&A differs from M&A in which most loan officers in an acquired bank are typically retained by an acquiring bank to maintain customer relationships. Although the credit files of the failed banks were transferred to the acquiring banks, more critical

⁷ In the U.S., loans represented only 9.7% of the external funds in 1997; In Japan, the ratios were 27.3% for large firms and 42.2% for small firms, respectively.

information about the acquired bank's borrowers should be accumulated in the form of soft information by the loan officers.⁸

2.2. *Sample and data*

I first identify 1,857 firms that had loan balances of more than 500 million won (equivalent to about \$0.4 million) with at least one of the five closed banks as of June 28, 1998, one day before the bank closures. Then, I identify 596 firms traded on the Korea Stock Exchange (KSE) as of the first trading day of 1997, excluding financial firms and firms that were delisted during 1997-1998. Because the goal of this paper is to assess valuation effects of the event that are due to the factors external to client firms, the exclusion of the insolvent or near-insolvent firms can be justified to isolate the impact of the event on solvent clients. Furthermore, and more importantly, the loans of delisted firms on the verge of insolvency should not be transferred to the healthy banks, because the loans were very likely to have been already classified as nonperforming loans.⁹ The final sample that satisfies the above two selection criteria consists of 118 firms, or about 20% of publicly traded firms.

The most salient feature of the data set is that the firms' pre-existing relationships with the acquiring banks are identified. Some firms had borrowing relationships with more than one closed bank and consequently their loans were transferred to more than one acquiring bank. I

⁸ Arguments for soft information and its nontransferability are discussed in Berger, Miller, Peterson, Rajan and Stein (2002) and Peterson (2002) and modeled in Stein (2002).

⁹ By the exclusion of delisted firms, 22 firms are eliminated from the final sample. The reasons for delisting were acquisition (10), bankruptcy (8), impairment of the whole paid-in capital (1), foreign sale (1), and others (2).

therefore construct a variable indicating the intensity of prior lending relationships with acquiring banks as the number of the acquiring banks with which a firm had prior relationships as a fraction of the number of the acquiring banks (*Prior Relationship*). For instance, if a firm had a prior relationship with one of the two acquiring banks to which its loans were transferred, the value of *Prior Relationship* is 0.5. Another variable is used to measure the strength of prior lending relationships with the acquiring banks in terms of loan amount (*Loan_Acquiring/Loan_All*).

Other explanatory variables analyzed in this study can be classified into several categories (see Table 2 for the definition of the variables considered). I consider whether a firm had a locational advantage with a closed bank (*Locational Advantage*) and whether an acquiring bank is a main creditor bank (*Main Creditor Bank*) of a firm.¹⁰ Three event exposure variables are also defined: *#Closed/#Lending Banks*, *Loan_Closed/Loan_All*, and *Collateralized Loan*. They each indicate an aspect of a firm's dependence on the closed banks prior to the event: *#Closed/#Lending Banks* indicates the number of closed banks with which firms had lending relationships as a fraction of the total number of lending banks; *Loan_Closed/Loan_All*, the amount of loans granted by closed banks as a fraction of that granted by all lending banks; *Collateralized Loan*, the amount of collateralized loans as a fraction of the total amount of loans granted by closed banks.

One must control for firm characteristics to avoid the possibility that valuation effects differ only because different types of lenders tend to deal with different borrower classes. Firm

¹⁰ Since all the acquiring banks are nationwide banks, there does not exist a locational advantage from the acquiring banks. Also, since all the closed banks are smaller banks, none of them is a main creditor bank of a sample firm.

age measures a firm's public reputation, familiarity, or sustainability. Firm size also captures various aspects: the familiarity of a firm to banks and investors, the availability of public information, and possibly the degree of negotiation power over banks during loan contracting. Other firm-specific characteristics also considered. Sales growth reflects the strength of a firm's cash flow; profit indicates performance of firms; financing proportions from bond and equity markets are suggestive of the availability of alternative sources of funding.

I also employ a *Chaebol* dummy variable to measure the possibility of an extra financing source from affiliated firms or the strength of political power as a means of escaping from financial distress. Furthermore, to control for the difference in firm's ownership structure, the proportion of the largest, minority, and foreign shareholders are also included in the regressions.

Finally, the five bank pairs differ in financial health, market share, main business location, target customers, institutional charters, and exposure to further bank merger events. In addition, each acquiring bank differs in terms of the extent of overall loan contraction, changes in the number of employees, and their own stock market valuations. These various idiosyncratic aspects of the banks possibly affect the market reactions to the event. The most appropriate way to control for possible bank-specific effects is to add the indicators for the five closed-bank/acquiring-bank pairs in the regressions.

Loan and collateral data are collected from the Corporate Loan Information database of the Korea Federation of Banks. The firm characteristics and ownership variables as of the end of 1997 are obtained through the Financial Analysis System of the Korea Information Service (KIS) and Listed Corporation Analysis of National Information & Credit Evaluation, Inc (NICE). Information on banks' financial situation and operations is published by the FSS.

Finally, daily stock returns for the estimation of abnormal returns are obtained from the Stock Market Analysis Tool of the KIS.

2.3. Summary statistics

The mean of *Prior Relationship* is 0.51, a value indicating that a half of firms borrowing from the closed banks also had relationships with the acquiring banks as well (Table 3). The means of *Locational Advantage* and *Main Creditor Bank* are 0.20 and 0.09, respectively, values suggesting that only a small proportion of sample firms had benefits from closer relationships with their regional banks and main creditor banks. The number of closed banks with which an average firm had borrowing relationships is 1.6, and the ratio of the closed banks to the total number of lending banks is 18.3%, which implies that the average number of lending banks for a sample firm is 8.7. The loan proportion with the closed banks is 7.4%, of which 22.9% of the loans were covered by collateral.

On average, firms financed 30.0% of total funds from bond markets, 15.5% from equity markets, and 54.5% from loan markets, which confirms that a typical Korean firm, even a publicly traded one, relies heavily on loan financing. The sample firms differ a great deal, especially in size and age. About one fourth of firms are among the firms associated with the chaebol. Because the closed bank of *Bank 5* pair is the only nationwide bank, 60% of sample firms had borrowing relationships with the bank. Since some firms had multiple relationships with the five closed banks, the sum of *Bank 1* through *Bank 5* is greater than one.

Of 118 firms, 45 firms had prior relationships with all of the acquiring banks to which their loans were transferred, 45 firms had no prior relationships with their acquiring banks, and 28 firms had prior relationships with some of their acquiring banks. In general, firms that had no

previous relationships with the acquiring banks tend to have greater *Locational Advantage*, *#Closed/#Lending Banks*, *Equity Finance*, and *Bank 1*, and lower *Loan_Acquiring/Loan_All*, *Log_Size*, *Chaebol*, *Foreign Shareholders*, and *Bank 2*.

3. Empirical evidence from stock market valuation

3.1. Methodology

I estimate daily abnormal returns of individual stocks using the standard market model in which the Korea Stock Price Index (KOSPI) is employed for the market return. Then, I calculate multiple day or cumulative abnormal returns (ARs) by summing the abnormal returns for an event period. The CARs are averaged over all firms within the sample to produce a portfolio average CAR.

To prevent the overall financial crisis from influencing parameter estimates of normal returns, I set the estimation period as a 262-trading-day normal period from the first trading day of 1997 ($t = -436$) to one day before the Korean government sought a rescue package from the IMF (November 22, $t = -175$). The decision to close the five banks was made through a long process dating back to December 4, 1997 ($t = -164$). At that time, a broad plan of financial sector reform was announced, which was the first substantive action taken by the government for banking sector restructuring. The details about the bank reform were gradually revealed, but it was not until an ad hoc committee for the evaluation of bank viability was formed on June 20, 1998 ($t = -7$) that an extreme measure such as bank closure became probable.

The event periods, during which abnormal returns are calculated, consist of (1) a one-week pre-event (runup) period, (2) the event period, and (3) a two-month post-event period. The

runup period, $t = -7$ to -2 , begins with the day when the Bank Management Evaluation Committee was formed. The event period, $t = -1$ to $+1$, is the three days centered on the event day, June 29, when the closed and acquiring banks were announced. The post-event period, $t = +2$ to $+51$, ends on August 29, two months after the event day. This post-event period can capture investors' revised expectations of the effects of the event on the borrowing firms, covering the period in which firms attempted at least one renewal of short-term debt.¹¹

3.2. Significance of the event

Although the bank closures studied here surprised the markets, some may wonder whether the bank closures are a significant event in view of the fact that the five closed banks are relatively small and regional and that the sample firms are all relatively large public firms. One way to evaluate the significance of the event is to calculate CARs for firms that had no relationships with any of the five closed banks, and to compare them with those for the sample firms exposed to the event.

I divide the out-of-sample firms into two groups due to the following reason. To identify nonviable banks, twelve banks that did not meet the minimum capital ratio of 8% at the end of 1997 were ordered on February 27, 1998 to submit a recapitalization plan before the bank closure decision. The plans of the remaining seven banks were approved on the condition that the banks take remedial action. Therefore, the market value of the firms that had lending relationships with these seven surviving banks should be affected differently from those with the five closed banks by the announcement of the bank closures. However, the “too big to fail”

¹¹ Djankov, Jindra, and Klapper (1999) take a longer event period $t = (0,+50)$ with the same reason. James and Wier (1987) and Becher (2000) also use a relatively long 30-day and 35-day event period, respectively.

expectation was wide-spread, implying that the market ignored the possibility of four big, nationwide of the seven banks (ChoHung, Commercial, Hanil, and Exchange) being forced to close. I thus consider only three smaller of the seven surviving banks (Peace, Kangwon, and Choongbuk), which are similar in size to the five closed banks as a reference portfolio.

I assembled portfolios of three sets of firms: (1) *Closed*: 118 firms that had lending relationships with at least one of the five closed banks; (2) *Surviving*: 42 firms that had lending relationships with at least one of the three surviving smaller banks, but not with any of the five closed banks; (3) *Others*: 436 firms that had lending relationships neither with the five closed banks nor with the three surviving banks.

Fig. 3 shows that the CARs of the three portfolios begin to diverge from the others on the day when the bank appraisal committee was formed ($t = -7$): The portfolio of firms with the surviving banks shows positive abnormal returns, while that with the closed banks displays negative abnormal returns. Since the quality of the 12 banks was known to investors, they were able to expect which bank had a greater probability of closure prior to the release of the committee's closure decision. The paths of the CARs diverge more during the two weeks centered on the event day – the CAR of the portfolio *Closed* is -20.56%, while that of *Surviving* is 10.67%. This result suggests that the continuity of banking relationships certainly have a positive effect on the firms borrowing from the surviving banks immediately following the event. It confirms that the event drew the close attention of the market and the market actually responded to the event.

3.3. Overall valuation effects

In this section, I analyze the CARs of the portfolio *Closed* in detail. The destruction of valuable relationships with closed banks and the reallocation of the firms' loans from the closed banks to healthy banks has countervailing effects on borrowers. Financial market efficiency implies that firm value should reflect the market's expectation of any losses or gains borrowers incur. Therefore, if the value of a bank relationship comes mainly from informational advantages arising from long-lasting bank-firm interactions, the event would have an overall negative impact on the value of the borrowing firms. On the other hand, if the value of bank relationship comes more likely from bank durability or quality, the event would have positive valuation effects.

Bank closures have an immediate and negative effect on the value of borrowing firms (Table 4, Panel A). For the three-day period around the announcement of the bank closures, $t = -1$ to $+1$, the mean CAR is -4.85% and significant at the 5% level. This result is comparable in magnitude to the four-day average excess returns of -4.16% for client firms of Continental Illinois during the bank's impending insolvency in 1984, a result shown by Slovin, Sushka, and Polonchek (1993). The mean two-week CAR ($-7,+5$) is even more negative (-19.45%), and 81.4% of firms have negative CARs. The results imply that a bank's closure and the consequent loss of long-lasting relationships are potentially harmful to the bank's client firms.

However, the market's response changes its direction beginning with the second week after the announcement. The mean CAR for the period up to two months after the event, $t = +6$ to $+51$, turns significantly positive, to 22.39% . During the gradual rebounding period, investors observe the bank's renewals of short-term loans and adjust their expectations, taking into account the positive effect of the event such as stability of loan provision, a larger pool of

loanable funds, more efficient monitoring, and other future benefits to be expected from the healthy and bigger banks.

Overall two-month CAR including the event period, $t = -1$ to $+51$, is positive (8.73%), though not statistically significant.¹² This result suggests that the value of bank relationships does not derive from the information generated by long-term relationships but rather from bank quality. Therefore, the termination of relationships due to a bank's insolvency may not necessarily reduce the market value of firms borrowing from the bank. Depending on the specific mechanisms employed to replace failed banks, cutting off the relationship with a weak bank can raise the value of its client firms.

CARs were calculated in Panel B for three groups of firms: firms that had a prior borrowing relationship with *all* of the acquiring banks to which their loans were transferred (*Prior Relationship* = 1), firms that had a prior relationship with *none* of their acquiring banks (*Prior Relationship* = 0), and firms that had a prior relationship with *some* of their acquiring banks ($0 < \textit{Prior Relationship} < 1$). During the longer period, $t = -1$ to $+51$, firms with no prior relationship had substantially greater positive valuation effects (13.26%) relative to firms with a prior relationship (2.62%), though the difference is not statistically significant.

3.4. Cross-sectional regressions

¹² The t-statistic is calculated taking into account any cross-sectional dependence in abnormal returns caused by the clustering with respect to calendar time. In other words, the test statistic is the ratio of mean CAR for a relevant event period to its standard deviation estimated from the time series of prediction errors during pre-event period, multiplied by square root of the number of days in the event period, following Brown and Warner (1985).

To capture the possible association between the magnitude of CARs and characteristics specific to firms, unaggregated individual firm's CARs are regressed against a variety of possible determinants of CARs. I conduct OLS regressions for the three-day event period, $t = -1$ to $+1$, and the two-month event period, $t = -1$ to $+51$, to see if the market's immediate reaction is revised during a longer period. The t-statistic for statistical inferences is calculated using the heteroskedasticity-consistent White standard errors.

To account for the type of bank-firm relationships and firm characteristics, I regress CAR (-1,+1) and CAR (-1,+51) against relationship variables such as *Prior Relationship*, *Locational Advantage*, and *Main Creditor Bank*, and various firm-specific variables such as *Log_Age*, *Log_Size*, *Sales Growth*, *Profit/Interest*, *Bond Finance*, *Equity Finance*, and *Chaebol* (Table 5, specification [1]). Given different extents of exposure to the event in terms of the number of closed banks and the amount of loan and collateral transferred to acquiring banks, I consider the variables *#Closed/#Lending Banks*, *Loan_Closed/Loan_All*, and *Collateralized Loan*. I also test whether the different closed and acquiring bank pairs have different effects on the value of firms and whether the ownership structure of a firm plays a role in determining the variation of CARs of each firm (specification [2]).

In both specifications, estimated coefficients for the three-day period, $t = -1$ to $+1$, on *Prior Relationship* are positive, but statistically insignificant, so the evidence for the market's concern about the problem of asymmetric information is weak. The insignificance of the coefficients is not confined to *Prior Relationship* – almost all variables except the intercept term and *Bank 2* in the all specifications are not significant. It is interesting to see that the intercept term is significantly negative (-0.35 to -0.38). This suggests that when the market was hit by the event,

investors reacted negatively failing to incorporate bank-borrower relationship and various firm characteristics in their valuation of firms.

However, when we allow sufficient time (two months) for the market to observe and analyze a bank's own loan renewal decisions, the coefficients of several variables in the regressions of CAR (-1,+51) turn significant. Especially surprising is the fact that *Prior Relationship* has a significantly negative coefficient of -0.14 to -0.17 ($t = -1.88$ to -2.01). The specifications have a high R^2 of 27.7% to 33.3%, which indicates that a high proportion of the variation in CARs is explained by the regressors.

I interact *Prior Relationship* with *Loan Finance* to see if the negative effect of prior relationships depends on the loan size of a firm (Table 6, specification [1]).¹³ This interaction variable measures the differential effect of prior relationships on a firm's dependence on the loan market in its financing. The estimate of the interaction term *Prior Relationship*Loan Finance* is -1.15 and significant at the 1% level ($t = -2.70$), which suggests that the negative impact of *Prior Relationship* is mainly due to firms that rely heavily on loan financing. In other words, the size of loan financing exacerbates the negative effect of prior relationships on firm valuation.

In specification [2], I replace the variable *Prior Relationship* with the intensity of the prior relationship in terms of the amount of loans granted by the acquiring banks (*Loan_Acquiring/Loan_All*). The signs of the coefficients remain unchanged but they are statistically insignificant because, unlike the dummy for indicating whether a firm had a relationship with an acquiring bank, the information about loan amount is publicly unavailable.

¹³ I do not include a stand-alone variable, *Loan Finance*, in the set of explanatory variables because it is used for the reference variable for *Bond Finance* and *Equity Finance* (the three variables add up to one).

Both types of firms experience the destruction of valuable relationships with, and private information held by, the closed lending banks. However, Type N firms face potentially severe information asymmetry when renewing their loans with the acquiring banks, while Type P firms may not. Then, what makes the market think that Type N firms should have more incremental value than Type P firms during the longer post-event period?

A conflict of interest arising from the soft budget constraint problem is central to investor concerns.¹⁴ An acquiring bank that had prior debt claims has private information gained through its lending activities to Type P firms and can make more informed decisions on loan renewals (informational advantage). On the other hand, the bank also has an incentive to misuse the private information. By announcing renewals of loans that the bank privately knows to be potentially bad (the soft budget constraint), the bank can protect its own interest, that is, it can help the firm finance from the equity market directly or other lenders indirectly to avoid writing off pre-existing outstanding loans. The market is well aware of a bank's conflict of interest, fully recognizing that a bank can take the excessive risk of renewing loans of bad firms. Accordingly, the market does not place credence in the signals of loan renewals to Type P firms.

In contrast, the market believes that Type N firms whose loans are renewed with a totally new acquiring bank are good firms, although a possibility of misrepresentation exists because of the lack of information if the bank avoids the cost of investigating the firms. Hence, the renewal conveys a clear positive signal to the market.

3.5. Test of self-selection bias

¹⁴ See Dewatripont and Maskin (1995) and Perotti (1993) for a theoretical model.

The loan renewal itself, its timing, and equally importantly its conditions such as interest rate and loan size, etc. are not known to the econometrician and maybe not immediately known to the investors either. Yet, loan renewal by the acquiring banks plays a key role in the framing of the exercises and the interpretation of the results. In this regard, the interpretation of the results in the previous section is implicitly based on the assumption that all sample firms get their loans renewed. This assumption is reasonable because only performing loans were in the pool of banks' loan renewal decisions and the sample firms continued to survive in their businesses after the event. However, the interpretation is problematic if more Type N firm's loans get renewed than Type P firm's loans, because the higher abnormal returns of Type N firms then should simply come from the higher probability of loan renewals.

I proxy the banks' loan renewal announcements using a dummy variable, *Continuation*, indicating whether the firms continued their relationships with the acquiring banks, which is available only as of the end of year in general.¹⁵ I regress *Continuation* dummy variable on the market value of the borrowing firms and other controlling variables. In the probit estimations of the selection equation (Table 7), the coefficients of *Prior Relationship* are ranged from 2.31-2.72 and significant at 1% level in all specifications, suggesting that the acquiring banks tend to

¹⁵ This variable does not perfectly proxy the firms that are renewed because we still do not know whether the termination of relationships takes place during the two month post-event period (the event window where the CARs are calculated) or between thereafter and end-1998. If the termination takes places during the two-month post-event period, the use of the subsample of firms whose relationships are continued is more appropriate. If it takes place thereafter, the use of the full sample is more appropriate. I compare the results of both cases in Table 8.

continue the relationships with the firms that had lending relationships prior to the loan acquisitions.

It is particularly interesting to see that the coefficients of *Market/Book Value* interacted with *Prior Relationship* are all negative after controlling for those two variables. This result suggests that the acquiring banks tend to continue the relationships with less valuable firms that had prior relationships, which serves as evidence for the presence of banks' conflicts of interest.

To examine the possible sample selection (or loan renewal) bias using this variable, I conduct the Heckman correction procedure using the inverse Mills ratio computed from the probit estimation [3] of Table 7 to control for any selection bias. OLS regressions of CAR (1,+51) are conducted on the selected sample firms that continue their relationships with the acquiring banks after the event (*Continuation* =1). In specifications [1]-[3] of Table 8, various exclusion restrictions are employed, which takes into account that some variables are critical in an acquiring bank's decision on whether to continue lending relationships with a firm, but not in valuing the firm in equity markets.

Both the Heckman correction procedure for the subsample of loan continuation and the full sample OLS without the inverse Mills ratio (last column) show positive coefficients of *Prior Relationship* and negative coefficients of *Prior Relationship*Loan Finance* (Table 8). Moreover, the difference between them is marginal, and the inverse Mills ratio term is statistically insignificant. These results confirm that the main finding, which is the significantly negative effect of *Prior Relationship* on valuation of firms with heavy loan financing, does not come from the different probability of a firm's loan renewal.

3.6. Robustness tests

I test extensively the robustness of the empirical results (the results of the tests are not reported in this paper). First, One may think that the firms' relatively large stock price reactions to the bank closure event are not credible because the firms had a small proportion of their total loan financing (7.4%) from the closed banks. Thus, such large stock price reactions could have come from some other confounding events around the event studied in this paper. The use of a longer (two-month) post-event period strengthens this suspicious view. I check news about the sample firms as well as bank- and policy-related announcements around the bank-closure announcement, using the *Korea Economic Daily*. I find no significant news regarding firm-specific events, influential policy changes, or macroeconomic shocks during the four-month period centered on the event day, other than the announcement of the list of 55 insolvent firms by the FSS on June 18, 1998 ($t = -9$). However, none of the firms are found in the sample drawn for this study.

Second, I estimate CARs in three different ways: (1) I extend the estimation period to the whole pre-event period until the day of formation of the ad hoc evaluation committee, that is, $t = -436$ to -8 . (2) I form equal-weighted average returns of the sample firms and estimate the coefficients of the market model using those daily returns of the portfolio, as in Karceski, Ongena, and Smith (2003). (3) I calculate buy-and-hold abnormal returns using the market-adjusted return method.¹⁶ In all cases, the results turn out to be qualitatively unchanged.

Third, a specific industry may have been hit more severely than others by the crisis, and more (or fewer) firms in that industry may have been included in the sample. To look for any

¹⁶ Ritter (1991) argues that the test of the null hypothesis that, for example, the 30-day CAR is zero is equivalent to a test of the null hypothesis that an average daily abnormal return of sample firms during the event month is equal to zero. He suggests using the buy-and-hold abnormal return to test the null hypothesis that a monthly abnormal return is equal to zero.

such industry effect, I calculate CARs by applying the control firm approach suggested by Barber and Lyon (1997) – mean returns of sample firms less mean returns of out-of-sample firms of the same industry. The results from regressions of CARs computed using this method and regressions of CARs computed using the standard market model controlling for industry dummy variables are not qualitatively different from the results reported earlier in this section.

Fourth, the fact that Type N firms has not had a relationship with a financially sound acquiring bank could simply signal to the markets that Type N firms are bad. To see the effects of a firm's quality on the market's response, I look at the pattern of CARs of each subgroup according to credit rating. The results are consistent with the previous results that Type N firms benefited more from the event than Type P firms in terms of higher incremental stock market value. I find it interesting along the line with Morgan (2002) that the abnormal returns between Type P firms and Type N firms are most distinguishable when they have no credit ratings. This result suggests that the effect of the existence of the pre-existing banking relationships on the valuation of bank loan announcements is greater when firms are more opaque due to the unavailability of credit ratings.

4. A theoretical model of loan signaling

I sketch in this section a theoretical model for analyzing a bank's lending decision and its subsequent loan announcement effect on the value of a borrowing firm. The model is based on a specific situation where the bank acquires a loan portfolio in its entirety from another bank,

and where the acquiring bank has to determine whether to renew the acquired loans.¹⁷ The equilibrium behavior of the bank is examined using the concept of sequential equilibrium.

The main element of the model is a bank's conflicts of interest over its loan renewal decisions: the conflict between increasing the odds of recovering bad prior loans (by renewing loans to bad firms) and maintaining its reputation on asset quality (by renewing loans to good firms), when facing firms whose qualities are known to the bank through the previous lending activities; the conflict between saving screening costs (by renewing loans randomly) and maintaining its reputation on asset quality (by screening firms to identify firm quality and subsequently renewing only good firms), when facing firms that are new to the bank.

There are two types of the borrowers: ones with prior lending relationships with the acquiring bank, and ones with no such relationship. The bank's loan renewal announcement could have positive impact on the stock prices of the borrowers with prior relationships due to the lender's informational advantage. The model, however, demonstrates that such positive impact can be more than offset by the conflict of interest that comes with that prior relationship. The probability of the acquiring bank holding a bad loan portfolio is large, or the bank's ex ante reputation on its asset quality is poor, the bank is more likely to favor a pre-existing relationship when the borrower's prospects are poor. Therefore, renewals by the bank with a prior relationship can result in lower announcement effect. Furthermore, the effect is more likely to be negative when the size of the pre-existing loans is large.

¹⁷ The full description of the model will be available upon request. This model can be applied to a more general setting where the loan announcement effect on the values of the borrowers is different depending on whether the borrowers have a substantial amount of prior loan balances before the loan announcement.

Using this model of conflicts of interest, I show the conditions under which a pre-existing relationship can be detrimental to the positive valuation effect of a loan announcement. For intermediate values of bank's reputation (h_1), whether the incremental value of Type P firm is higher than that of Type N firm will depend on the parameters: the size of a firm's prior bank debt (D), discount rate (δ), bank's equity claim in a firm (e), and cost of screening (c). In particular, the incremental value will be greater for Type N firm than for Type P firm if $e(1 - e)(1 - \delta)D > 4c$. This is to say that with higher D and lower c , given a value of δ and e , the value of Type N firm is more likely to be greater than that of Type P firm. This result is consistent with the empirical finding in the previous section that size of prior loan exacerbates the negative effect of a prior relationship on firm valuation, and with the fact that the screening costs are likely to be low for the publicly traded firms in the sample.

To see the loan renewal effects more clearly, I calibrate the incremental value of each type that varies with the size of D and c , at a given level of other parameters. I assume that $e = 0.03$, $\delta = 0.9$, and $h_1 = 0.5$, and at a given range of D and c , I plot the announcement effects in terms of the incremental firm values.¹⁸ Fig. 4 shows that the loan announcement effect is more likely to be larger for Type N firm, as D gets larger and c gets smaller.

5. Further evidence from long-term lending decision by acquiring banks

¹⁸ It is additionally assumed that $k=2$ and $L=1$, where the incremental value of firm from a bank's loan renewal announcement, as assessed by investors, is assumed in the model to be the amount of loan renewal (L) times the multiplier (k).

This section investigates the acquiring banks' lending decisions directly: whether the banks increase loan size once the relationships are maintained. The aim of this further investigation is to show the effect of the pre-existing relationships on the banks' lending decisions and to see if the effect is consistent with what the stock market expects. This exercise supplements the stock market reactions to banks' lending decisions during a short period (two-month) following the event by exploring banks' lending decisions during a much longer period of time (two and half years).

The firm-bank matched sample consists of 181 firms. The size of the sample differs from that used in Section 3 because some firms had multiple lending relationships with the five closed banks and each firm-bank relationship is counted as one observation in this section.

I first examine how many firms maintained the banking relationships. Sixty two of 94 Type P firms (67%) continued the relationships until the end of 2000, while only 41 of 87 Type N firms (47%) maintained the relationships with the acquiring banks. These results suggest that the acquiring banks are more likely to maintain the relationships with Type P firms than with Type N firms.

However, the acquiring banks appear to prefer Type N firms to Type P firms in expanding their loan exposures, given that they continue the lending relationships. For the subsample of firms that in fact continued the relationships, *Loan_Acquiring/Loan_All* of Type P firms remains statistically unchanged (10.0% to 11.2%) during the period, while that of Type N firms increases significantly from 9.5% to 17.0%.

Now, to see robustly how the value of relationship banking in the form of loan availability evolves after the loan acquisitions, I conduct random effect panel regressions of changes in loan availability during each year on the various firm and bank characteristics (Table 9). The

coefficient of *Prior Relationship* is -0.02 and significant at 1% level, suggesting that the pre-existing relationship plays a negative role in bank's lending decisions (specification [1]). This result remains unchanged even after controlling for collateral requirements (specification [2]) and the overall loan growth of firms (specification [3]).

We see from the results of Table 7 and 9 that the acquiring banks are more likely to continue the relationships with firms that have prior relationships, but do not increase their loan exposures to these firms. In contrast, the banks tend to end the relationships with the firms that do not have previous relationships; once the relationships are maintained, however, the banks are enthusiastic to expand loan exposures. These results suggest that banks have a conflict of interest that comes with an incentive to favor the pre-existing relationships to increase the odds of recovering those pre-existing loans.

6. Conclusion

This paper questions a commonly held view that durable firm-bank relationships have value through proprietary information produced over the course of the relationships. The positive abnormal returns in response to a countervailing event, which is the forced exits of bad banks and the transfer of their loans to healthy banks, suggest that the losses from termination of the relationships with the closed banks are more than offset by the gains from the increase in quality of the lending banks.

More interestingly, the abnormal returns of firms that had no prior borrowing relationship with an acquiring bank to which their loans were transferred outperform those of firms that had a prior relationship. Banks with a prior relationship have private information that can be used

for their own loan renewal decisions, but investors are aware of a conflict of interest an acquiring bank faces when deciding upon the renewal of loans to pre-existing client firms. An acquiring bank can evergreen the newly acquired loans not to endanger its own initially outstanding large loans. On the other hand, loan renewal to the newly transferred client firms is unaffected by this conflict. This paper suggests that the effect of the conflict of interest does more than offset any perceived advantage from the pre-existing banking relationship.

This study helps us understand the fundamentals of the value of bank-borrower relationships, especially the importance of the specific mechanisms employed to replace failed banks without doing harm to the value of their client firms. It shows that government-driven liquidation of banks followed by transfers of their loans outstanding to better banks can make client firms better off, which in turn helps acquiring banks to enhance sound operations and capital adequacy. This result mitigates the policy maker's concerns about potential negative effects of banking sector restructuring on the values of sound client firms of failed banks.

This study also suggests that the intensity of firms' pre-existing relationships with acquiring banks should be considered when the government plans a banking sector reform or when an individual bank searches for a target bank for acquisition. If moral hazard is present in the banking system, prior relationships with acquiring banks could pull down the value of firms from the consolidation. It is critical that the close connection between bank management staffs and client firms be completely severed in a bank restructuring, without which the problem of bad debt cannot be completely resolved.

Appendix. Chronicle of the Event

November 22, 1997 ($t = -174$). The Korean government seeks a rescue package from the IMF to control a sharp decline of the Korean won.

December 4, 1997 ($t = -164$). The Korean government announces a financial sector restructuring plan as one of the agreements with the IMF. It includes addressing the problems of bad loans and the weak capital structure of the banking system. A successful restructuring is seen as essential to the recovery of Korea's international credit standing.

February 27, 1998 ($t = -101$). The FSS orders 12 banks that failed to meet the 8% of the BIS capital adequacy ratio as of the end of 1997 to submit their rehabilitation plans by April 30, 1998 ($t = -48$). After the plans are submitted, internationally recognized accounting firms conduct assessments and audits on the plans.

June 20, 1998 ($t = -7$). The Management Evaluation Committee is formed to identify nonviable banks on the basis of its evaluation of the banks' rehabilitation plans.

June 29, 1998 ($t = 0$). The FSS announces that five banks will be closed and their assets and liabilities will be transferred to five healthier and bigger banks in the form of P&A agreements as of the same day.

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Table 1

Commercial banks in Korea during 1996-2000

On June 29, 1998, the assets and liabilities of DongNam were transferred to Housing, Kyongki to KorAm, ChungChong to Hana, DaeDong to Kookmin, and DongHwa to Shinhan, respectively.

Panel A. BIS capital adequacy ratio (%)

	1996	1997	1998	1999	2000
DongNam	8.76	4.54			
Kyongki	8.96	6.69			
ChungChong	9.81	7.05			
DaeDong	9.07	2.98			
DongHwa	9.48	5.34			
Five closed banks (mean)	9.22	5.32			
Housing	- ^a	10.29	10.79	11.74	9.92
KorAm	8.80	8.57	15.21	12.14	8.67
Hana	8.71	9.29	13.10	12.33	10.45
Kookmin	8.46	9.78	10.09	11.38	11.18
Shinhan	10.03	10.29	14.69	13.85	12.30
Five acquiring banks (mean)	9.00	9.64	12.78	12.29	10.50
All banks (mean)	9.78	7.55	6.67	10.73	10.56 ^c
Number of banks	25	26	20	17 ^b	17

^a In 1997, Housing Bank became a commercial bank from being a specialized bank owned by the government.

^b Later in 1998, Commercial merged with Hanil; In 1999, Kangwon and Chungbuk merged with Chohung, and Hana with Boram, respectively.

^c In January 2000, more rigid methods of calculating the capital adequacy ratio were applied following the advice of the IMF.

Panel B. Non-performing loan / total credit (%)

	1996	1997	1998	1999	2000
DongNam	2.49	5.65			
Kyongki	3.19	9.67			
ChungChong	4.59	12.52			
DaeDong	3.51	9.62			
DongHwa	2.69	7.94			
Five closed banks(mean)	3.30	9.08			
Housing	-	2.04	8.01	7.36	5.08
KorAm	1.75	3.36	2.99	13.73	9.00
Hana	0.79	2.37	3.13	8.58	5.60
Kookmin	2.45	3.25	4.93	11.27	6.98
Shinhan	2.75	4.05	4.39	6.72	3.98
Five acquiring banks (mean)	1.94	3.01	4.69	9.53	6.13
All banks (mean)	4.10	6.03	7.88	13.57 ^a	8.85
Number of banks	25	26	20	17	17

^a In December 1999, the FSS introduced new rigid standards for banks' asset classification to fully incorporate borrowers' capacity to repay.

Panel C. Share in the loan market (%)

	1996	1997	1998	1999	2000
DongNam	1.46	1.27			
Kyongki	1.80	1.67			
ChungChong	1.01	0.83			
DaeDong	1.41	1.25			
DongHwa	2.23	1.94			
Five closed banks (sum)	7.91	6.95			
Housing	-	9.53	10.27	13.53	15.93
KorAm	2.35	2.30	3.06	4.31	4.96
Hana	2.77	2.66	2.85	6.87 ^a	7.77
Kookmin	9.65	8.99	13.27	15.62 ^b	17.12
Shinhan	8.23	7.46	6.94	8.53	8.64
Five acquiring banks (sum)	23.01	30.96	36.39	48.85	54.44
All banks (sum, %)	100.00	100.00	100.00	100.00	100.00
(billion won)	207,971	270,037	265,592	244,114	273,055
Number of banks	25	26	20	17	17

^a In 1999, Hana merged with Boram

^b In 1999, Kookmin merged with a specialized bank, Long-Term Credit Bank.

Table 2
Description of variables

Variable	Description
[Relationship banking]	
<i>Prior Relationship</i>	The number of acquiring banks with which a firm had prior lending relationships divided by that of all banks that acquired the firm's loans from the closed banks.
<i>Loan_Acquiring/Loan_All</i>	The amount of loans granted by acquiring banks divided by that granted by all lending banks.
<i>Locational Advantage</i>	1 if the headquarters of one of the closed banks is located in the same province as the firm's headquarters and zero otherwise. This value is divided by the number of closed banks with which a firm had lending relationships.
<i>Main Creditor Bank</i>	1 if one of the acquiring banks is the main creditor bank of the firm and zero otherwise. This value is divided by the number of acquiring banks to which a firm's loans were transferred.
[Exposure to the event]	
<i>#Closed/#Lending Banks</i>	The number of closed banks with which firms had lending relationships divided by that of all lending banks.
<i>Loan_Closed/Loan_All</i>	The amount of loans granted by closed banks divided by that granted by all lending banks.
<i>Collateralized Loan</i>	The amount of collateralized loans as a fraction of the total granted by closed banks.
[Firm characteristics]	
<i>Log_Age</i>	Logarithm of firm age.
<i>Log_Size</i>	Logarithm of total asset.
<i>Sales Growth</i>	Growth rate of sales.
<i>Profit/Interest</i>	Profit / interest payment.
<i>Bond Finance</i>	Bond market finance / (bond+equity+loan market finance) .
<i>Equity Finance</i>	Equity market finance / (bond+equity+loan market finance).
<i>Loan Finance</i>	Loan market finance / (bond+equity+loan market finance).
[Firm ownership]	
<i>Chaebol</i>	1 if a firm is a subsidiary of the 64 conglomerates ("chaebol") and zero otherwise.
<i>Largest Shareholder</i>	Proportion of shares that the largest shareholder owns.
<i>Minority Shareholders</i>	Proportion of shares that minority shareholders (less than 1%) own.
<i>Foreign Shareholders</i>	Proportion of shares that foreign firms or individuals own.
[Bank pair]	
<i>Bank 1 – 5</i>	Indicators for the pair of five closed banks and five acquiring bank.

Table 3
Summary statistics

The number in the last column is the t-statistic for the null hypothesis that the values of Type N and Type P are not different from each other. ***, **, and * denote the significance at the 1%, 5% and 10% level, respectively.

Variables	Unit	Mean	PriorRelationship			t test
			0 (Type N)	(0,1)	1 (Type P)	
No. of firms	118		45	28	45	
<i>Prior Relationship</i>	[0,1]	0.506	0.000	0.524	1.000	
<i>Loan_Acquiring/Loan_All</i>	[0,1]	0.062	0.000	0.069	0.119	-8.549***
<i>Locational Advantage</i>	[0,1]	0.201	0.296	0.193	0.111	2.419**
<i>Main Creditor Bank</i>	[0,1]	0.091	0.133	0.036	0.083	0.829
<i>#Closed/#Lending Banks</i>	[0,1]	0.183	0.212	0.217	0.133	4.513***
<i>#Closed Banks</i>	{1,2,3,4,5}	1.610	1.267	2.393	1.467	-1.483
<i>Loan_Closed/Loan_All</i>	[0,1]	0.074	0.087	0.090	0.050	1.880*
<i>Collateralized Loan</i>	ratio	0.229	0.198	0.348	0.184	0.199
<i>Log_Age</i>	Log (year)	1.463	1.454	1.458	1.474	-0.442
<i>Log_Size</i>	Log (mil.won)	8.590	8.304	8.709	8.806	-4.276***
<i>Sales Growth</i>	ratio	0.131	0.147	0.079	0.147	-0.005
<i>Profit/Interest</i>	ratio	-0.504	-0.439	-0.935	-0.309	-0.408
<i>Bond Finance</i>	[0,1]	0.300	0.290	0.302	0.309	-0.585
<i>Equity Finance</i>	[0,1]	0.155	0.197	0.113	0.138	2.790***
<i>Loan Finance</i>	[0,1]	0.545	0.513	0.585	0.552	-1.060
<i>Chaebol</i>	{0,1}	0.288	0.156	0.393	0.356	-2.210**
<i>Largest Shareholder</i>	[0,1]	0.248	0.280	0.226	0.228	1.509
<i>Minority Shareholders</i>	[0,1]	0.494	0.464	0.487	0.529	-1.428
<i>Foreign Shareholders</i>	[0,1]	0.042	0.017	0.040	0.070	-2.519**
<i>Bank 1</i>	{0,1}	0.364	0.489	0.500	0.156	3.581***
<i>Bank 2</i>	{0,1}	0.186	0.156	0.286	0.156	-8.932***
<i>Bank 3</i>	{0,1}	0.212	0.200	0.321	0.156	0.000
<i>Bank 4</i>	{0,1}	0.246	0.244	0.429	0.133	0.546
<i>Bank 5</i>	{0,1}	0.602	0.178	0.857	0.867	1.345

Table 4

Estimation of cumulative abnormal returns (CARs)

The CARs are estimated using the market model over the pre-event estimation window of $t = -436$ to $t = -175$. At $t = -174$, the Korean government sought a rescue package from the IMF. At $t = -7$, the ad hoc committee was formed to evaluate the viability of banks. At $t = 0$, bank closures and asset transfers were announced. $t = +5$ and $t = +51$ are one week and two months after the event, respectively. ***, **, and * denote the significance at the 1%, 5% and 10% levels, respectively.

Panel A: The mean and median of CARs in percentage and the number of positive and negative CARs for each event window. The number in parentheses is the t-statistic for the null hypothesis of zero means. The first number in brackets is the number of positive CARs and the second number is the number of negative CARs. The first number in braces is the z-statistic of a sign test and the second number is the z-statistic of a Wilcoxon signed ranks test for the null hypothesis of zero medians. The number of firms in the sample is 118.

Event window	Mean		Median [pos./neg.]	
(-7,-2)	-5.79**	(-2.48)	-4.39 [37/81]***	{-4.37 / -4.72}
(-1,+1)	-4.85**	(-2.94)	-7.85 [32/86]***	{-5.59 / -5.41}
(+2,+5)	-8.81***	(-4.62)	-8.31 [24/94]***	{-8.00 / -6.47}
(-7,+5)	-19.45***	(-5.65)	-20.56 [22/96]***	{-8.75 / -7.68}
(+6,+51)	22.39***	(3.46)	27.09 [74/44]***	{2.86 / 4.53}
(-1,+51)	8.73	(1.26)	10.92 [65/53]*	{1.11 / 1.78}

Panel B: The mean of CARs in percentage for the case of Type P and Type N firms. The number in the last column is the t-statistic for the null hypothesis that the CARs of firms with *Prior Relationship* = 0 are not different from those with *Prior Relationship* = 1. N is the number of firms.

	<i>Prior Relationship</i>			t test
	0 (Type N)	(0,1) (mixed type)	1 (Type P)	
N	45	28	45	
(-1,+1)	-5.62	-7.10	-2.68	1.61
(-1,+51)	13.26	11.29	2.62	-1.28

Table 5

OLS regressions of CAR (-1,+1) and CAR (-1,+51) in two specifications

The number in parentheses is t-statistic computed using heteroskedasticity-robust standard errors. F statistic is for the null hypothesis that all the coefficients are jointly zeros. ***, **, and * denote the significance of the parameter estimates at the 1%, 5% and 10% levels, respectively. The number of firms in the sample is 118.

	CAR (-1,+1)		CAR (-1,+51)	
	[1]	[2]	[1]	[2]
<i>Prior Relationship</i>	0.025 (1.274)	0.014 (0.616)	-0.144* (-1.880)	-0.174** (-2.012)
<i>Locational Advantage</i>	0.041 (1.596)	0.039 (1.391)	0.167 (1.371)	0.196 (1.513)
<i>Main Creditor Bank</i>	0.054 (1.583)	0.058 (1.538)	-0.061 (-0.455)	-0.012 (-0.084)
<i>Log_Age</i>	0.042 (0.894)	0.044 (0.897)	0.261* (1.841)	0.249 (1.629)
<i>Log_Size</i>	0.023 (1.107)	0.026 (1.114)	-0.047 (-0.567)	-0.014 (-0.142)
<i>Sales Growth</i>	0.042 (1.260)	0.038 (1.128)	-0.099 (-0.741)	-0.154 (-1.081)
<i>Profit/Interest</i>	0.003 (0.409)	0.001 (0.154)	0.008 (0.370)	0.007 (0.333)
<i>Bond Finance</i>	0.032 (0.556)	0.036 (0.603)	-0.471* (-1.920)	-0.566** (-2.155)
<i>Equity Finance</i>	-0.020 (-0.173)	0.004 (0.032)	-2.308*** (-5.353)	-2.261*** (-4.862)
<i>Chaebol</i>	-0.007 (-0.322)	-0.009 (-0.377)	-0.223** (-2.315)	-0.161 (-1.593)
<i>#Closed/#Lending Banks</i>		-0.083 (-0.676)		-0.136 (-0.213)
<i>Loan_Closed/Loan_All</i>		-0.042 (-0.557)		-0.193 (-0.604)
<i>Collateralized Loan</i>		0.017 (0.899)		0.034 (0.429)
<i>Bank 1</i>		0.007 (0.326)		0.067 (0.851)
<i>Bank 2</i>		0.035** (2.017)		-0.176* (-1.684)
<i>Bank 3</i>		-0.002 (-0.087)		0.009 (0.088)
<i>Bank 4</i>		-0.027 (-1.267)		-0.140 (-1.431)
<i>Largest Shareholder</i>		0.039 (0.575)		0.022 (0.083)
<i>Minority Shareholders</i>		0.022 (0.448)		0.039 (0.205)
<i>Foreign Shareholders</i>		-0.016 (-0.124)		0.063 (0.116)
Intercept	-0.345* (-1.780)	-0.377* (-1.626)	0.736 (0.972)	0.527 (0.559)
F test	1.580	1.260	4.580***	3.580***
R-square	0.129	0.192	0.277	0.333

Table 6
 OLS regressions in alternative specifications of CAR (-1,+51)

Specification [1] includes an interaction variable of *Prior Relationship* and *Loan Finance*. In specification [2], *Prior Relationship* is replaced by *Loan_Acquiring/Loan_All*. The number in parentheses is t-statistic computed using heteroskedasticity-robust standard errors. F statistic is for the null hypothesis that all the coefficients are jointly zeros. ***, **, and * denote the significance of the parameter estimates at the 1%, 5% and 10% levels, respectively. The number of firms in the sample is 118.

	[1] interaction effect	[2] using intensity of prior relationship
<i>Prior Relationship</i>	0.436* (1.719)	
<i>Prior Relationship* Loan Finance</i>	-1.147*** (-2.697)	
<i>Loan_Acquiring/Loan_All</i>		1.816 (0.932)
<i>Loan_Acquiring/Loan_All * Loan Finance</i>		-3.399 (-1.065)
<i>Locational Advantage</i>	0.176 (1.498)	0.238* (1.843)
<i>Main Creditor Bank</i>	0.026 (0.176)	0.025 (0.163)
<i>Log_Age</i>	0.262* (1.828)	0.283* (1.863)
<i>Log_Size</i>	0.007 (0.080)	-0.048 (-0.567)
<i>Sales Growth</i>	-0.145 (-1.141)	-0.128 (-0.873)
<i>Profit/Interest</i>	0.014 (0.753)	0.010 (0.464)
<i>Bond Finance</i>	-0.940*** (-3.300)	-0.718** (-2.560)
<i>Equity Finance</i>	-2.639*** (-5.441)	-2.366*** (-4.615)
<i>Chaebol</i>	-0.147 (-1.537)	-0.160* (-1.678)
<i>#Closed/#Lending Banks</i>	-0.140 (-0.240)	-0.052 (-0.087)
<i>Loan_Closed/Loan_All</i>	-0.160 (-0.540)	-0.212 (-0.666)
<i>Collateralized Loan</i>	0.020 (0.286)	0.007 (0.085)
<i>Bank 1</i>	0.074 (1.042)	0.116 (1.460)
<i>Bank 2</i>	-0.208** (-2.050)	-0.161 (-1.543)
<i>Bank 3</i>	-0.023 (-0.221)	0.031 (0.304)
<i>Bank 4</i>	-0.136 (-1.416)	-0.096 (-1.000)
Intercept	0.552 (0.715)	0.709 (0.847)
F test	3.820***	3.490***
R-square	0.368	0.321

Table 7

Probit estimation of the selection equation

Probit estimation of *Continuation* dummy variable (1 if a firm continued relationships with the acquiring banks after the loan transfer; and zero otherwise) is reported. The number in parentheses is t-statistic computed using heteroskedasticity-robust standard errors. Chi-square statistic is for Wald test for the null hypothesis that all the coefficients are jointly zeros. ***, **, and * denote the significance of the parameter estimates at the 1%, 5% and 10% levels, respectively. The number of firms in the sample is 118.

	[1]	[2]	[3]
<i>Prior Relationship</i>	2.312*** (4.350)	2.307*** (3.692)	2.719*** (4.007)
<i>Market/Book Value</i>	1.502** (1.966)	1.925* (1.937)	2.056* (1.919)
<i>Prior Relationship*Market/Book Value</i>	-4.929*** (-3.325)	-4.599** (-2.365)	-5.257** (-2.456)
<i>Locational Advantage</i>		0.851* (1.811)	0.882* (1.747)
<i>Main Creditor Bank</i>		-0.221 (-0.437)	-0.174 (-0.297)
<i>Log_Age</i>		0.091 (0.122)	-0.124 (-0.160)
<i>Log_Size</i>		0.354 (0.948)	0.525 (1.174)
<i>Sales Growth</i>		0.300 (0.549)	-0.040 (-0.071)
<i>Bond Finance</i>		-0.177 (-0.200)	0.277 (0.295)
<i>Equity Finance</i>		-2.994* (-1.674)	-2.650 (-1.397)
<i>Chaebol</i>		-0.037 (-0.095)	-0.140 (-0.310)
<i>Loan_Closed/Loan_All</i>		4.101* (1.909)	3.452* (1.676)
<i>Collateralized Loan</i>		-0.071 (-0.273)	-0.243 (-0.839)
<i>Bank 1</i>			0.508 (1.366)
<i>Bank 2</i>			0.348 (0.893)
<i>Bank 3</i>			-0.370 (-1.145)
<i>Bank 4</i>			0.082 (0.209)
<i>Largest Shareholder</i>			2.107** (2.031)
<i>Minority Shareholders</i>			0.047 (0.066)
<i>Foreign Shareholders</i>			2.309 (1.502)
Intercept	-0.372 (-1.276)	-3.562 (-1.010)	-5.688 (-1.439)
Chi-square	20.850***	25.030**	47.810***
Pseudo R-square	0.167	0.277	0.343

Table 8

Heckman selectivity correction estimation of CAR (-1,+51) for the subsample of firms that continued relationships with the acquiring banks after the loan transfer

Inverse Mills ratio computed from the probit estimation is included in the explanatory variables in specifications [1]-[3] for the subsample with *Continuation* = 1. The last column is the OLS estimation of CAR (-1,+51) for the full sample including firms whose relationships are terminated as of the end of 1998. The number in parentheses is t-statistic computed using heteroskedasticity-robust standard errors. F statistic or Chi-square statistic is for the null hypothesis that all the coefficients are jointly zeros. ***, **, and * denote the significance of the parameter estimates at the 1%, 5% and 10% levels, respectively.

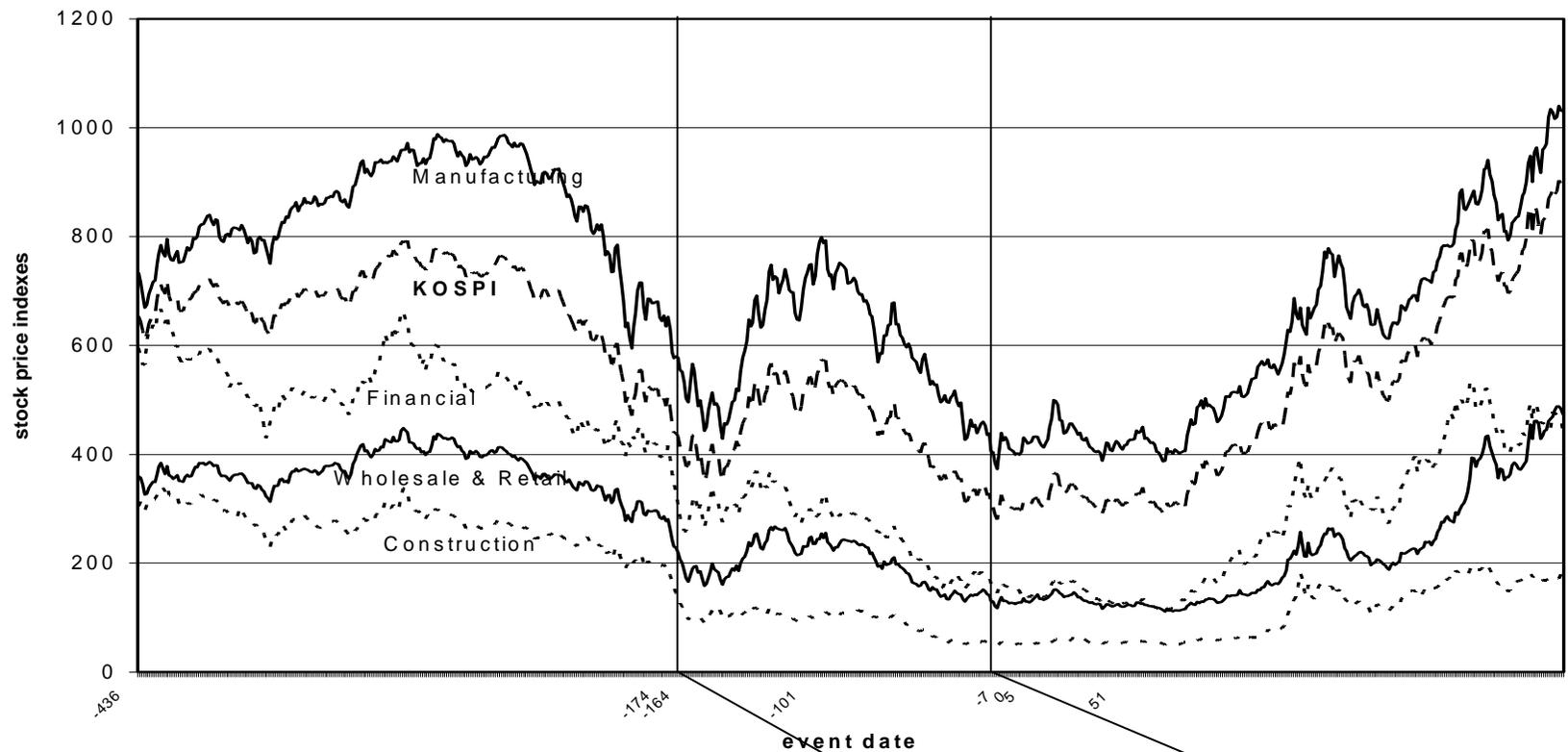
	[1]	[2]	[3]	Full sample
<i>Prior Relationship</i>	0.615** (2.098)	0.545* (1.729)	0.513* (1.673)	0.486** (2.104)
<i>Prior Relationship* Loan Finance</i>	-1.507*** (-2.783)	-1.073** (-1.966)	-0.933* (-1.674)	-1.237*** (-3.095)
<i>Locational Advantage</i>	-0.947** (-2.641)	0.200 (1.241)	0.283* (1.816)	0.156 (1.430)
<i>Main Creditor Bank</i>	-2.806*** (-4.504)	-0.023 (-0.118)	-0.025 (-0.125)	0.025 (0.172)
<i>Log_Age</i>		0.330 (1.276)	0.365 (1.543)	0.255* (1.853)
<i>Log_Size</i>		-0.130 (-1.325)	-0.093 (-0.929)	0.015 (0.188)
<i>Sales Growth</i>		0.037 (0.201)	0.010 (0.058)	-0.129 (-1.099)
<i>Profit/Interest</i>		-0.047 (-0.894)	-0.044 (-0.809)	0.014 (0.781)
<i>Bond Finance</i>		-0.774* (-1.874)	-0.788* (-1.891)	-0.973*** (-3.516)
<i>Equity Finance</i>		-3.023*** (-4.255)	-2.941*** (-4.268)	-2.653*** (-5.870)
<i>Chaebol</i>		-0.158 (-1.362)	-0.131 (-1.229)	-0.144 (-1.551)
<i>Bank 1</i>			0.111 (1.217)	0.069 (1.038)
<i>Bank 2</i>			-0.148 (-1.308)	-0.217** (-2.283)
<i>Bank 3</i>			0.059 (0.497)	-0.043 (-0.485)
<i>Bank 4</i>			-0.141 (-1.121)	-0.143 (-1.573)
Inverse Mills ratio	0.473 (1.076)	0.308 (0.687)	0.554 (1.128)	
Intercept	0.756*** (3.109)	1.336 (1.465)	0.820 (0.948)	0.483 (0.695)
F test	4.240***	2.880***	3.060***	4.670***
R-square	0.242	0.326	0.385	0.371
No. of firms	82	82	82	118

Table 9

Random effect panel regressions of changes in loan size) for the subsample of firms that continued relationships with the acquiring banks after the loan transfer

For the subsample of firms whose loans were transferred to the acquiring banks, and whose relationships with the banks were continued until the end of 2000, random effect panel regressions of changes in *Loan_Acquiring/Loan_All* during each year on the explanatory variables as of the end of previous year. The number in parentheses is t-statistic computed using heteroskedasticity-robust standard errors. Wald test is a statistic for the null hypothesis that all the coefficients are jointly zeros. ***, **, and * denote the significance of the parameter estimates at the 1%, 5%, and 10% levels, respectively.

	[1]	[2]	[3]
<i>Prior Relationship</i>	-0.022*** (-4.291)	-0.015*** (-2.818)	-0.015*** (-2.889)
$\Delta \text{Log_Loan_All}$			-0.122*** (-9.124)
<i>Prior Relationship</i> * $\Delta \text{Log_Loan_All}$			0.126*** (6.370)
<i>#Closed/#Lending Banks</i>	0.065* (1.903)	-0.007 (-0.159)	-0.004 (-0.076)
<i>Loan_Closed/Loan_All</i>	-0.081 (-1.493)	-0.027 (-0.507)	-0.050 (-1.070)
<i>Locational Advantagy</i>	-0.002 (-0.255)	0.007 (0.774)	0.012 (1.367)
<i>Main Creditor Bank</i>	0.008 (0.757)	0.002 (0.147)	-0.004 (-0.303)
<i>Log_Age</i>	-0.017 (-0.946)	0.003 (0.188)	0.019 (1.000)
<i>Log_Size</i>	0.015** (2.175)	0.015** (2.091)	0.010 (1.460)
<i>Sales Growth</i>	0.011 (1.431)	0.019** (2.400)	0.018** (2.320)
<i>Profit/Interest</i>	0.006*** (3.060)	0.002 (1.081)	0.001 (0.746)
<i>Bond Finance</i>	-0.038** (-2.333)	0.018 (1.114)	0.019 (1.179)
<i>EquityFinance</i>	-0.016 (-0.553)	-0.034 (-1.167)	0.000 (0.001)
<i>Chaebol</i>	-0.012** (-2.009)	-0.006 (-0.922)	-0.005 (-0.594)
<i>Largest Shareholder</i>	-0.091*** (-5.672)	-0.029 (-1.599)	-0.013 (-0.754)
<i>Minority Shareholders</i>	-0.074*** (-5.538)	-0.045*** (-2.947)	-0.037*** (-2.594)
<i>Foreign Shareholders</i>	-0.042 (-1.345)	-0.028 (-0.933)	-0.022 (-0.653)
<i>Bank1</i>	0.021*** (2.754)	0.014* (1.869)	0.012* (1.682)
<i>Bank2</i>	-0.007 (-1.104)	-0.002 (-0.325)	-0.006 (-0.712)
<i>Bank3</i>	0.018* (1.860)	0.016 (1.454)	0.013 (1.119)
<i>Bank4</i>	0.002 (0.190)	0.012 (1.365)	0.010 (1.052)
<i>Collateralized Loan_Acquiring</i>		-0.001 (-0.542)	-0.001 (-0.546)
<i>Collateralized Loan_Closed</i>		0.005* (1.697)	0.005** (2.013)
<i>Constant</i>	-0.017 (-0.290)	-0.099* (-1.760)	-0.094 (-1.547)
Wald (χ^2)	114.97***	43.09***	365.82***
Log-likelihood	661.74	602.91	606.27



	3/97	4	5	6	7	8	9	10	11	12	1/98	2	3	4	5	6	7	8	9	10	11	12
Real GDP growth rate (YoY, %)	4.9			6.2			5.5			3.6			-4.6			-8.0			-8.1			-5.9
Industrial production growth (YoY, %)	8.3	6.8	2.0	9.1	4.8	7.1	9.3	7.4	2.5	0.2	-9.6	0.3	-9.5	-11	-11	-14	-14	-13	-1.8	-9.2	0.5	5.1
Unemployment rate (%)	3.4	2.8	2.5	2.3	2.2	2.1	2.2	2.1	2.6	3.1	4.5	5.9	6.5	6.7	6.9	7.0	7.6	7.4	7.3	7.1	7.3	7.9
\$/1000Won	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	.86	.59	.64	.61	.73	.75	.71	.73	.81	.74	.72	.76	.80	.83
Interest rate (3 years, %)	129	130	124	112	114	124	132	136	140	213	253	234	225	213	186	163	129	95	85	73	73	70
Dishonored bills ratio (%)	.30	.32	.30	.29	.30	.27	.40	.56	.48	2.1	.72	.83	.62	.57	.62	.58	.69	.55	.42	.28	.26	.17

Fig. 1. Stock price indexes and main economic indicators around of the period of the financial crisis in Korea (1997-1998)

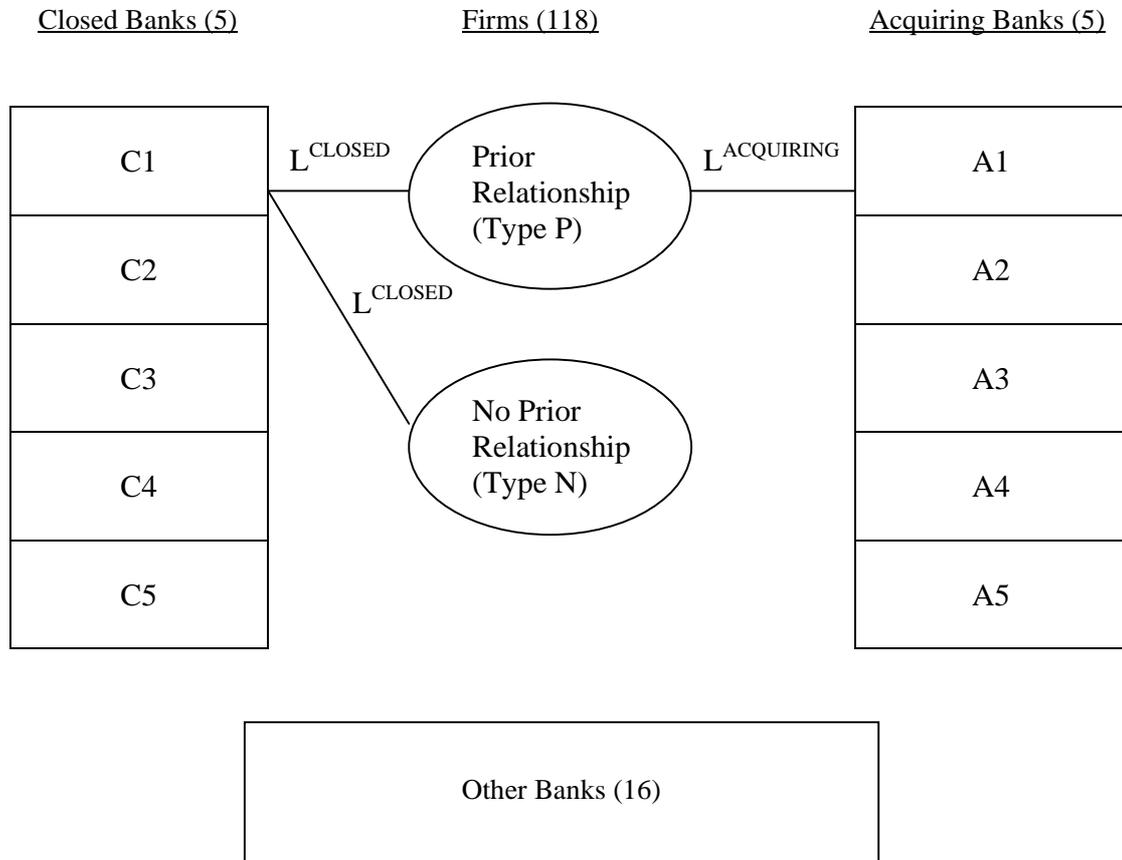


Fig. 2. Loan transfers from five closed banks to other five surviving banks. The loans of the closed bank 1 (C1) were transferred to the acquiring bank 1 (A1) in their entirety; C2 to A2; C3 to A3; C4 to A4; C5 to A5. There are two types of firms in terms of the existence of relationships with the acquiring banks prior to the transfer of their loans: Type P firms and Type N firms. L^{CLOSED} indicates the loans made by the closed banks, and $L^{ACQUIRING}$ indicates the loans made by the banks that had to acquire loan L^{CLOSED} prior to the loan transfers.

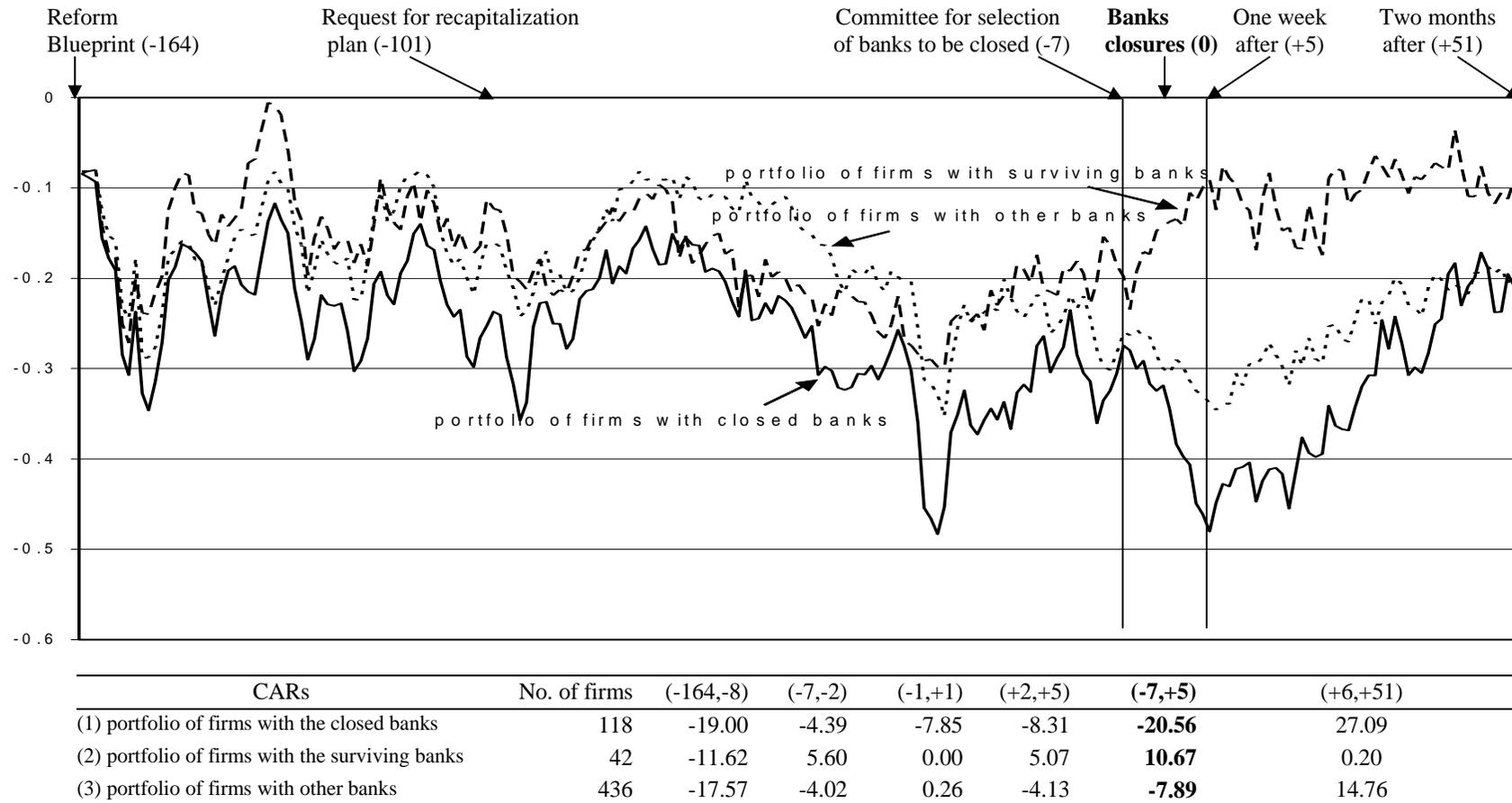


Fig. 3. Cumulative abnormal returns (CARs) of three portfolios. For each event window, the median CARs of three portfolios are estimated using the standard market model over the pre-event estimation window of $t = -436$ to $t = -175$ (pre-crisis period): (1) firms that had relationships with at least one of the closed banks; (2) firms that had relationships with at least one of the surviving banks but not with any of the closed banks; (3) firms that had relationships neither with the closed banks nor with the surviving banks. The surviving banks are the banks that were ordered to submit their recapitalization plans like the closed banks and were approved to continue their banking businesses.

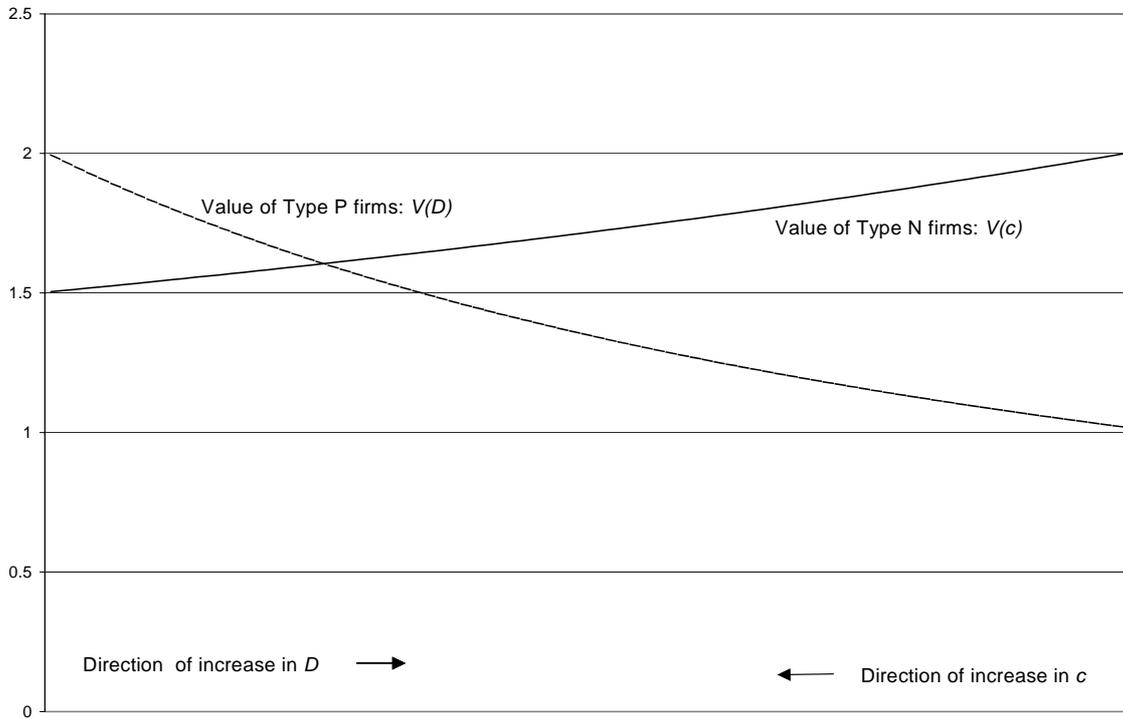


Fig. 4. Loan announcement effects in terms of stock market valuation. The incremental value of each type of firm due to the bank's loan renewal announcements are plotted in a range of the size of prior debt (D) for Type P firms and screening costs (c) for Type N firms. Type P firms are firms that had a prior borrowing relationship with the acquiring banks to which their loans were transferred; Type N firms are firms that had no prior relationship with the acquiring banks. It is given that $e=0.03$, $\delta=0.9$, $k=2$, $L=1$, and $h_1=0.5$, where e is bank's equity claim in a firm, δ is discount rate, k is the multiplier of the mental value of firm from a bank's loan renewal announcement as assessed by investors, L is the amount of loan renewal, and h_1 is bank's reputation.